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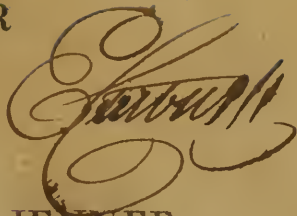
Washington, D. C.





LETTER

FROM



DOCTOR EDWARD JENNER,

TO

WILLIAM DILLWYN, Esq.

ON

THE EFFECTS OF VACCINATION,

IN

*Preserving from the Small-Pox.*

TO WHICH ARE ADDED

SUNDRY DOCUMENTS RELATING TO VACCINATION,

REFERRED TO AND ACCOMPANYING THE LETTER.

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23157

PUBLISHED BY THE PHILADELPHIA VACCINE SOCIETY.

William Fry, Printer.

1818.

## INTRODUCTION.

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THE importance of the following Letter, lately received from London, has induced the Philadelphia Vaccine Society to publish it in its present form. The communication was made in answer to the enquiry of one of our fellow citizens, who was desirous of knowing Dr. Jenner's opinion of his truly interesting discovery, after it had stood the test of twenty years' experience. The friends of humanity will, no doubt, be highly gratified by this additional confirmation of the security to be obtained against the ravages of the Small-Pox, one of the most loathsome and desolating of all diseases.

## LETTER

To WM. DILLWYN, Esq. *Higham Lodge, Walthamstow,  
Essex.*

DEAR SIR,

IT is a curious and most delightful fact, that while the disputations you allude to are here and there going on among individuals, with regard to the efficacy of Vaccination, the small-pox is flying before it in all directions. In a wide district around me, embracing the most populous part of the county of Gloucester, which abounds with manufactories, the small-pox is scarcely ever heard of; and if it does happen to appear from infection brought by the wandering pauper, it either finds itself insulated, or is rendered incapable of spreading, by giving immediately the vaccine security to those within its atmosphere who may happen to remain unprotected. In these few words, sir, I think I have answered the main part of your letter; but I will add a few more; and you have my full consent to transmit, what I say, to your friends either on this or the other side of the Atlantic. Wherever Vaccination has been *universally* practiced, there the small-pox ceases to exist. It matters not how wide the district or how populous the city, the result is, and, from the nature of things, must be the same. There is scarcely any part of the civilized world that cannot bear testimony to the truth of this position. For extent of territory, we may turn our eyes to our possessions in the East, and to various parts of South America; and to towns and cities, many of the most conspicuous in Europe. As a cheering document, with regard to the extinction of the small-pox throughout a kingdom, I shall take the liberty of enclosing the report from Sweden.\* Now, as the good sense of the Swedes directed them to employ Vaccination for bringing about this great event, why should not Britain avail herself of this great gift, and employ it in a similar way? Here the Boon is distributed with a partial and sparing hand, and consequently the small-pox still exists in several parts of our island. However, I have the happiness to say, that since the

\* See Appendix, No. I.

first promulgation of my discovery, in the year 1798, the deaths by small-pox in the British realms, according to the best estimate I can form, are reduced from more than 40,000, to less than 6,000. The metropolis, for the last ten or twelve years, exhibited a reduction of about one half only; but during the last two years, Vaccination has been more extensively practiced than ever, both from the benevolence of private individuals of the Faculty, and the public institutions; and this year promises a far greater reduction in the number of deaths than any that has preceded it. You may, perhaps, at the India House, have acquaintances who will furnish you with copies of their reports from Calcutta, Bombay and Madras. A copy of one of these I have enclosed, that it may be seen with what vigour the new inoculation was prosecuted in a country too distant for the approach of prejudice. In the island of Ceylon, the ravages were dreadful, although many efforts had been made to lessen its fatality by variolous inoculation. This, wherever it was practised, produced a spreading of the disease, and made a bad matter worse; so that the people would have nothing to do with it. But after a little time, they took to the Vaccine very readily; and by referring to Dr. Christie's publication on the subject, which you may find at any of the medical booksellers, you will observe that the small-pox became totally extinct. However, in spite of glaring facts of this description, I must candidly acknowledge, I am not at all surprised, that both in our country and in other parts of the world, a partial prejudice should now and then lift up its head. It is called into existence, not from any thing faulty in the principle of Vaccination, but from a wrong and injudicious application of that principle. For example, a child or a family of children, may be in such a state, that the action of the vaccine fluid when applied to the skin, shall be either wholly or partially resisted. It may either produce no effect at all, or it may produce pustules, varying considerably in their rise, progress, and general appearances, from those which have been designated by the term *correct*. It was about the year 1804, that I was fortunate enough to discover the general cause of these deviations, and no sooner was it fully impressed on my mind, than I published it to the world. Though all may have access to the paper\* with the greatest facility, yet few, very few indeed, among those who vaccinate, have paid any attention to it; yet I am confident, from a review of the practice on an im-

\* See Appendix, No. III.



mense scale, and through a period of more than twenty years, that it is a matter which has a greater claim on our attention, than any one thing besides connected with Vaccination—indeed I may say than every other thing. What I allude to is a coincident eruptive state of the skin, principally bearing what we call the herpetic or irritative character. If we vaccinate a child under its influence, we are apt to create confusion. The pustule will participate in the character of the herpetic blotch, and the two thus become blended, forming an appearance that is neither vaccine nor herpetic; but the worst of it is, that the patient does not receive that *perfect* security from small-pox infection, which is given by the perfect pustules. It by no means always happens that the appearance of an eruption of this, or any other description, prevents security; but it is so commonly the case, that I cannot too much enforce the necessity for rigid attention in the inoculator, whenever a child is presented to him for vaccination, under such circumstances. If the case admits of no delay, these irritative affections of the skin should be removed at once; which may be done with ease, and the most perfect safety, when they are not very numerous and of long standing; medicine in that case may be necessary in conjunction with an application. But on this subject I need not enlarge, as it is more particularly spoken of in the paper referred to. However, I may now just say, that the application I make use of for destroying these eruptions, is the unguentum hydrargyri nitrati of the last London Dispensatory.

One word more with respect to prejudice. How frequently have we seen, in a variety of the public prints, paragraphs of this description—"A gentleman's family, consisting of three or four or half a dozen children, were vaccinated by an eminent surgeon, and all went through the disease in the most satisfactory manner, and were pronounced safe; yet, on being exposed to the infection of the small-pox, they all had the disease, but happily they all recovered." Here, sir, the mind becomes entangled with a false association. The public conceive, that an *eminent surgeon* must be a perfect master of this little branch of our art; but it often happens that he has not stooped to look at any thing beyond its outline; and when deviations arise in the progress of the pustules, to that extent which I have pointed out as momentous, they pass by without attracting any particular attention.

Pray excuse me—I find myself spinning out my letter into an essay, and at last was like to have forgotten the most important part of your inquiry; namely, "whether I myself had

not renounced my opinion of the efficacy of Vaccination." This question has been often put to me—why? I cannot conceive. It came not long since, through a medical friend of mine in London, from a very respectable lady in the country, whose children had been vaccinated. I know not how to give you more complete satisfaction on this point, than by a quotation from the letter written to my medical friend in reply.

"The ghost that has appeared to Mrs. C. has taken an annual stalk over the country for these ten years past. I find no great difficulty in laying it; but I cannot give it final repose; the phantom will rise again in spite of me. If you will look over your records relating to Vaccination in Ireland, you will find, by one of the annual reports distributed by Dr. Labatt, that this spirit appeared in Dublin not many years since, and made many furious menaces, disturbing the tranquillity of some of the inhabitants of that fair city. There you will see a letter of mine written to the doctor, so much in point with regard to Mrs. C.'s enquiry, that really I cannot add any thing to it, as my opinion of the powers of Vaccination is precisely the same now as it was then. Indeed, if it had wanted strength at that time, it has since obtained it most abundantly. I beg then that you will let Mrs. C. know, *my confidence in the efficacy of the Vaccine, to guard the constitution from the small-pox, is not in the least diminished.* That exceptions to the general rule have appeared, and that they will sometimes appear, I am ready to admit. They have happened after small-pox inoculation; and by the same rule, as the two diseases are so similar, should they not happen after the Vaccine?"

Believe me, dear sir, with great respect,

Your obt. and faithful servant,

EDW. JENNER.

Berkeley, Glostershire, }  
19th August, 1818. }

# APPENDIX.

## No. I.

*Copy of a Letter from the President of the National Vaccine Establishment, to Lord SIDMOUTH, dated 15th July, 1814; enclosing, Report on the State of Vaccination in Sweden.*

N. V. E. Leicester Square, 15th July, 1814.

MY LORD,

THE Board of the National Vaccine Establishment have received the enclosed Report, "On the state of Vaccination in Sweden," since they had the honour of communicating to your Lordship their Report of the State of Vaccination, during the Year 1813, and they respectfully desire that it may be submitted to the Honourable the House of Commons, in order that it may be printed, and subjoined as an APPENDIX to their Report.

(Signed)

J. LATHAM, President.

JAS. HERVEY, M. D.

Registrar.

To the Right Honourable Lord Viscount Sidmouth,  
&c. &c. &c.

### REPORT OF THE STATE OF VACCINATION IN SWEDEN.

*(Translated from the original in Swedish.)*

ON the fourteenth of January, 1814, Mr. Macmichael, an English Gentleman, attended the Royal College of Health, in Stockholm, and delivered to the College a copy of the Report of the NATIONAL VACCINE ESTABLISHMENT in London, dated 22d of April, 1813, and presented to Lord Sidmouth, Secretary of State for the Home Department; at the same time he requested that a short Account of the progress of Vaccination in Sweden, and of the measures which had been adopted for its promotion, might be communicated to him, for the information of the British Parliament.

The Royal College had particular satisfaction in receiving Mr. Macmichael, and undertook to comply with his request, so much the more readily, as it had the pleasure of numbering among its honorary Members the respectable name of Dr. JENNER, for whom it was reserved to demonstrate, by the most decisive experiments, the protective power of the Cow-Pox against the most terrible and destructive contagion of the Small-Pox; a pestilence, which by means of this blessed discovery, must certainly be ultimately extirpated from the face of the earth.

It was to be expected, from the excellent arrangements which the Kings of Sweden had adopted for somewhat more than half a century, in every department of Medical Science, that the incomparable discovery of Doctor Jenner, like the Inoculation for the Small Pox at a former period,\* should not only become an object of the most accurate investigation, but also, when approved by experience, be generally introduced and promoted by rewards and established regulations.

The Medical Practitioners of Sweden, who had already been informed, from the time of Dr. Jenner's first discovery, by means of a constant correspondence with the learned in other countries, of the expectations which were entertained of the success of experiments made with the Cow Pox, had great pleasure in learning that one of their colleagues, Dr. Gahn, a Member of the Royal College, had, towards the end of 1799, procured some Vaccine Matter, and obtained the most satisfactory result from inoculating with it. Another Swedish Physician, now Professor of Medicine, Dr. Rosensköld, printed, in 1801, a small pamphlet, entitled, "To the Public on the Cow-Pox;" and performed Vaccination with success, in several parishes in Skåne. About the same time the undersigned also published a more detailed account, with coloured figures, under the title, "The Small-Pox may be extirpated;" and this Essay was distributed to all the Churches in the Kingdom.

The Government, already attentive to the inestimable advantage, which the Inoculation of the Cow-Pox seemed to promise, directed the College to examine Dr. Jenner's discovery with the greatest accuracy; for which the proper means were immediately afforded: and the College was ordered, after collecting the results, to present its Report to the King.

This Report, which fully confirmed the excellence of the Jennerian discovery, occasioned the salutary law, which was first enacted in 1803, by which Vaccination was established throughout the Kingdom; and the College was commanded to promote its adoption by all possible means. The King was pleased to appropriate 900 dollars, spec. banco, to be divided into Premiums, which were to be distributed among such Me-

\* It is remarkable, that the celebrated Dr. David Schultzenheim, who was appointed as long ago as 1754, by the States of the Kingdom, to inquire into Sutton and Dimsdale's Mode of Inoculating the Small Pox in England, is now the President of the Royal College of Health, and has been the most instrumental, by means of his powerful influence, in promoting the most salutary measure, for the introduction of Vaccination.



dical men as could exhibit the greatest number of vaccinated persons.

A particular regulation was made for the Metropolis, imposing a fine of Three Dollars on any one, who should fail to announce to the Medical Officer of the district, the appearance of the contagion of the Small Pox: and in every such case, the person infected was to be carried to the Small-Pox Hospital: where every measure was adopted for his being properly nursed; and the same precautions have been continued to the present time.

It was long a question, Whether new-born Children could be vaccinated with success, and whether the Matter taken from them might be employed with as much security as if taken from Adults?

This doubt has been altogether removed; and in the General Lying-in-Hospital all the children are now vaccinated within nine days from the time of their birth: so that, by means of this progressive Vaccination, fresh matter remains constantly in existence.

The want of a sufficient supply of Vaccine Matter for the extensive provinces of the Kingdom, was long an obstacle to the universality of Vaccination in Sweden. This obstacle no longer exists: since the Royal College of Health, in consequence of the humble representations which it made to the King, obtained the adoption of a very effectual measure for this purpose, in the appointment of a particular Establishment for the general regulation of Vaccination throughout the Kingdom, which took place in the year 1812.

This Establishment consists of a Director, and several inspectors of the Stations for Vaccination in the Provinces. The Director is a Member of the Royal College of Health, whom the King has graciously commanded to receive and examine all reports, to answer all enquiries, to conduct the distribution of Vaccine Matter, which is delivered, free of postage, to all persons who apply for it; and lastly, to report to the College every thing relating to Vaccination that requires further regulation, and to propose to it, as proper persons to receive rewards, all those who appear to be the most deserving. He has also the immediate inspection of all the Medical men, who are appointed to conduct the business of the Stations, established in almost every Province; the progressive Vaccination performed at these Stations being calculated to maintain a constant supply of fresh Matter, which is also distributed, free of postage, to those who require it; and their proceedings being registered in proper Catalogues and Journals.

In Stockholm, three several Stations of this kind have been appointed, whence fresh Matter may always be procured with certainty, if it happen to be wanting in any particular Province.

The Archbishops, Bishops, and the whole of the Clergy throughout the kingdom, having, from the time of the happy discovery of Vaccination, embraced it with the most distinguished zeal; and many of this respectable body having not only employed the most effectual means for the removal of vulgar prejudice against it, but having even actually practised Vaccination themselves; the King, assured of the continued exertions of the Clergy in the same cause, was pleased to direct, that every Minister should superintend the progress of Vaccination within his parish: and should be empowered to call to his assistance one or more Inspectors of Vaccination, according to circumstances, for the purpose of causing all Children to be properly vaccinated within the first year after their birth, and keeping proper documents of the performance of the operation. In each Parish or District, there must be an accredited Vaccinator, whose duty is to perform Vaccination, and to give a Report of his proceedings to the Royal College of Health.

The College has also published, by the King's command, a Book of Instructions for Vaccinators and Inspectors of Vaccination, which has been distributed gratis to all the Churches in the Kingdom. This Treatise, adapted to the use of the Public, affords an accurate knowledge of the true and false Cow-Pox; of the varieties which most frequently occur in it; and of the cutaneous diseases, which occur so often in Sweden, very nearly resembling the Small-Pox.

For the more effectual encouragement of the practice of Vaccination, the King has been graciously pleased to appoint rewards of two different kinds, Pecuniary Premiums, and Honorary Medals. The latter are distributed, commonly in Silver, but sometimes in Gold, to those who have particularly distinguished themselves. In all cases, those who have deserved rewards, are humbly pointed out to the King, by the College of Health; and his Majesty has reserved to himself the right of assigning the proportions in which those rewards shall be distributed. It is also in the King's name, and with a certain degree of publicity, that these marks of his approbation are bestowed.

For the honour of the Medical Profession in Sweden, it must not be forgotten, that although Inoculation for the Small-Pox was one of the most lucrative branches of their pri-

vate practice, and has been entirely superseded by the simple process of Vaccination, no one individual of the profession has raised any obstacles against the Cow-Pox; but every one has contributed to its advancement, by giving advice, information, and assistance, to the utmost of his ability. No single publication has appeared to call in question its high importance,\* and its superiority to Variolous Inoculation; which has been entirely discontinued ever since the year 1802, rather by a tacit and universal consent, than in consequence of any Royal prohibition.

It may therefore be asserted, that the Small-Pox, that equally disgusting and destructive pestilence, which for many ages continued annually to send out of the world an immense number of young Children, is now, through the influence of Dr. Jenner's inestimable discovery, so perfectly extirpated in Sweden, that it never can become epidemic, even if at any time, notwithstanding all the orders and all the vigilance employed for its exclusion, the infection should make its appearance. Such, in the last twelve years, has been the effect of the King's wise and humane attention, of the unanimity and disinterestedness of the Medical Profession, of the patriotic zeal of the Clergy, of the good examples so promptly exhibited by the upper classes, and of the progress of information and civilization in the lower.

The undersigned, who has drawn up this short account, at the request of the Royal College of Health, has also the honour of sending with it, in the name of the college, a Copy of the Book of Instructions, and an impression in Silver of the Honorary Medal, which was struck by the King's command, under the direction of the College, and which is distributed in the King's name for the promotion of Vaccination.

FR. HEDIN, M. D.

First Physician to the King, Medical Counsellor,  
&c. &c.

Stockholm, 10th February, 1814.

\* The answer which the undersigned returned the 1st November, 1801, to a Letter addressed to him, by the Vaccine Committee of the Society of Medicine, at Paris, and which is inserted in the second Report of that Committee, cannot justly be considered as a Publication of this kind. It was not quite three Months after this time, that, having acquired perfect confidence from inoculating a Cow, with the Cow-Pox, and transferring the operation to the human subject, he published the before-mentioned Essay, entitled, "The Small-Pox may be extirpated."

## No. II.

*Supplement to the Madrid Gazette, of the 14th October, 1806.\**

ON Sunday, the 7th of September last, Dr. Francis Xavier Balmis, Surgeon Extraordinary to the King, had the honour of kissing his Majesty's hand, on occasion of his return from a voyage round the world, executed with the sole object of carrying to all the possessions of the Crown of Spain, situated beyond the seas, and to those of several other nations, the inestimable gift of Vaccine Inoculation. His Majesty has inquired, with the liveliest interest, in all that materially related to the expedition, and learned with the utmost satisfaction, that its result has exceeded the most sanguine expectations that were entertained at the time of the enterprize.

This undertaking had been committed to the diligence of several Members of the Faculty, and subordinate persons, carrying with them twenty-two children, who had never undergone the Small Pox, selected for the preservation of the precious fluid, by transmitting it successively from one to another, during the course of the voyage. The expedition set sail from Coruua, under the direction of Balmis, on the 30th of November, 1803. It made the first stoppage at the Canary Islands, the second at Porto Rico, and the third at the Caracas. On leaving that Province, by the port of La Guayra, it was divided into two branches: one part sailing to South America, under the charge of the Subdirector Don Francis Salvani; the other, with the Director Balmis on board, steering for the Havanah, and thence for Yucatan. There a subdivision took place: the Professor Francis Pastor proceeding from the port of Sisal, to that of villa Hermosa, in the province of Tobasca, for the purpose of propagating Vaccination in the district of Ciudad Real of Chiapa, and on to Goatemala, making a circuit of four hundred leagues, through a long and rough road, comprising Oaxaca; while the rest of the expedition, which arrived without accident at Vera Cruz, traversed not only the Vice-royalty of New Spain, but also the interior provinces; whence it was to return to Mexico, which was the point of re-union.

\* This shows with what ardor the Spaniards disseminated Vaccination. It subsequently appeared, by documents received from various parts of South America, that this embassy had been the means of subduing the Small-pox in most of the Provinces belonging to the King of Spain on that continent.



This precious preservative against the ravages of the Small Pox has already been extended through the whole of North America, to the coasts of Sonora and Sinaloa, and even to the Gentiles and Neophytes of High Pimeria. In each capital a Council has been instituted, composed of the Principal Authorities, and the most zealous members of the Faculty, charged with the preservation of this invaluable specific, as a sacred deposit, for which they are accountable to the King and to posterity.

This being accomplished, it was the next care of the Director to carry this part of the expedition from Africa to Asia, crowned with the most brilliant success, and, with it, the comfort of Humanity. Some difficulties having been surmounted, he embarked in the port of Acapulco for the Philippine Islands; that being the point at which, if attainable, it was originally intended that the undertaking should be terminated.

The bounty of Divine Providence having vouchsafed to second the great and pious designs of the King, Balmis happily performed the voyage in little more than two months: carrying with him, from New Spain, twenty-six children, destined to be vaccinated in succession, as before; and as many of them were infants, they were committed to the care of the Matron of the Foundling Hospital at La Corunna, who, in this, as well as the former voyages, conducted herself in a manner to merit approbation. The expedition having arrived at the Philippines, and propagated the specific in the islands subject to his Catholic Majesty, Balmis, having concluded his philanthropic commission, concerted with the Captain General the means of extending the beneficence of the King, and the glory of his august name, to the remotest confines of Asia.

In point of fact, the Cow-pox has been disseminated through the vast Archipelago of the Visayan Islands, whose Chiefs, accustomed to wage perpetual war with us, have laid down their arms, admiring the generosity of an enemy, who conferred upon them the blessings of health and life; at the time when they were labouring under the ravages of an epidemic Small-Pox. The principal persons of the Portuguese colonies, and of the Chinese empire, manifested themselves no less beholden, when Balmis reached Macao and Canton; in both which places he accomplished the introduction of fresh virus, in all its activity, by the means already related: a result, which the English on repeated trials, had failed to procure, in the various occasions when they brought out portions of matter

in the ships of their East India Company, which lost their efficacy on the passage, and arrived inert.

After having propagated the Vaccine at Canton, as far as possibility and the political circumstances of the empire would permit, and having confided the further dissemination of it to the Physicians of the English factory at the above-mentioned port, Balmis returned to Macao, and embarked in a Portuguese vessel for Lisbon; where he arrived on the 15th August. In the way he stopped at St. Helena, in which, as in other places, by dint of exhortation and perseverance, he prevailed upon the English to adopt the astonishing antidote, which they had undervalued for the space of more than eight years, though it was a discovery of their nation, and though it was sent to them by JENNER himself.

Of that branch of the expedition which was destined for Peru, it is ascertained that it was shipwrecked in one of the mouths of the River de la Magdalena; but having derived immediate succour from the natives, from the Magistrates adjacent, and from the Governor of Carthagena, the Subdirector, the three Members of the Faculty who accompanied him, and the children, were saved, with the fluid in good preservation, which they extended in that port, and its province, with activity and success. Thence it was carried to the isthmus of Panama, and persons properly provided with all necessaries, undertook the long and painful navigation of the River de la Magdalena: separating, when they reached the interior, to discharge their commission in the towns of Teneriffe, Mompox, Ocana, Socorro, San Gil y Medellin, in the valley of Cucuta, and in the cities of Pamplona, Giron, Tunja, Velez, and other places in the neighbourhood, until they met at Santa Fe: leaving every where suitable instructions for the Members of the Faculty, and in the more considerable towns, regulations conformable to those rules which the Director had prescribed for the preservation of the virus; which the Viceroy affirms to have been communicated to *fifty thousand* persons without one unfavourable result. Towards the close of March, 1805, they prepared to continue their journey in separate tracks, for the purpose of extending themselves, with the greater facility and promptitude, over the remaining districts of the Viceroyalty, situated in the road of Popayan, Cuença, and Quito, as far as Lima. In the August following they reached Guayaquil.

The result of this expedition has been, not merely to spread the Vaccine among all people, whether friends or enemies;

among Moors, among Visayans, and among Chinese; but also to secure to posterity, in the dominions of his Majesty, the perpetuity of so great a benefit; partly by means of the Central Committees that have been established, as well as by the discovery which Balmis made of an indigenous matter in the cows of the valley of Atlixco, near the city of Puebla de los Angeles; in the neighbourhood of that of Valladolid de Mechoacan, where the Adjutant Antonio Gutierrez found it; and in the district of Calabozo, in the province of Caracas, where Don Carlos de Pozo, Physician of the residence, found it.

A multitude of observations, which will be published without delay, respecting the developement of the Vaccine in various climes, and respecting its efficacy, not merely in preventing the Natural Small-Pox, but in curing simultaneously other morbid affections of the human frame, will manifest how important to humanity will prove the consequences of an expedition, which has no parallel in history.

Though the object of this undertaking was limited to the communication of the Vaccine in every quarter; to the instruction of Professors, and to the establishment of regulations, which might serve to render it perpetual,—nevertheless, the Director has omitted no means of rendering his services beneficial, at the same time, to agriculture and the Sciences. He brings with him a considerable collection of exotic plants. He has caused to be drawn the most valuable subjects in Natural History. He has amassed much important information; and, among other claims to the gratitude of his country, not the least consists in having imported a valuable assemblage of trees and vegetables, in a state to admit of propagation; and which, being cultivated in those parts of the Peninsula that are most congenial to their growth, will render this expedition as memorable in the annals of Agriculture, as in those of Medicine and Humanity. It is hoped that the Subdirector and his coadjutors, appointed to carry these blessings to Peru, will shortly return by way of Buenos-Ayres, after having accomplished their journey through that Vice-royalty, the Vice-royalty of Lima, and the districts of Chili and Charcas; and that they will bring with them such collections and observations as they have been able to acquire, according to the instructions given by the Director, without losing sight of the philanthropic commission which they received from his Majesty in the plenitude of his zeal for the welfare of the human race.

### No. III.

*To the Editors of the Medical and Physical Journal.*

GENTLEMEN,

THOSE herpetic affections which so frequently appear among the children of the poor, and which are evidently contagious, often prevent the vaccine virus from producing its correct action. The skin, although it be apparently sound at the point of insertion, is nevertheless so influenced by the disease, as frequently to baffle all our efforts to produce a correct pustule, and consequently to secure the constitution from the contagion of the small-pox. The eruptions I allude to, for the most part, correspond with those of the Second Order of Cutaneous Diseases described by the ingenious Dr. WILLAN, under the term *Psoriasis Diffusa*.\* The face, the eyelids, the tender skin behind the ears, and particularly the scalp, are the parts most commonly affected; but the limbs and body not unfrequently exhibit the same appearances. As far as I have been able to observe, it is more common among the lower classes of society in the country than in London. It is not uncommon to see it pass through a village school, assuming a variety of characters, according to the state of the constitution of the child affected with it. I do not mean to say, that the pustule† is always imperfect, and not effective, when the inoculated patient has this malady; on the contrary, it is sometimes perfectly correct, and much more frequently so when it has been of long standing, than when in its recent state; and what is remarkable, the disease is then (when of long duration) sometimes swept entirely away. I have noticed this impediment to the perfect formation and progress of the vaccine pustule, in my general correspondence, for more than two years past, and conceive it to be a more frequent source of the spurious pustule than any other, or indeed than all the rest united. Dr. Marcet inserted some hints I communicated to him on this head, in your Journal, for May, 1803, but I believe they have not been much attended to.

In my Paper of Instructions for Vaccine Inoculation, pub-

\* The labours of Dr. Willan in this rugged field of science, all should acknowledge with thankfulness and gratitude.

† Having in my former Treatises used the term *pustule*, I make choice of it now, lest it should create confusion; though, perhaps, not so appropriate as *pock* or *vesicle*.



lished some years back, I have endeavoured to guard the inoculator from being deceived by false appearances, by the following observations.

“The vaccine fluid is liable, from causes apparently trifling, to undergo a decomposition. In this state it sometimes produces what has been denominated the spurious pustule; that is, a pustule, or an appearance on the arm not possessing the characteristic marks of the genuine pustule. Anomalies assuming different forms may be excited, according to the qualities of the virus applied, or the state of the person inoculated; but by far the most frequent variety or deviation from the perfect pustule, is that which arrives at maturity and finishes its progress, much within the time limited by the true. Its commencement is marked by a troublesome itching; and it throws out a premature efflorescence, sometimes extensive, but seldom circumscribed, or of so vivid a tint as that which surrounds the pustule completely organized; and (which is more characteristic of its degeneracy than the other symptoms) it appears more like a common festering produced by a thorn or any other small extraneous body sticking in the skin, than a pustule excited by the vaccine virus. It is generally of a straw colour, and when punctured, instead of the colourless, transparent fluid of the perfect pustule, its contents are found to be opaque. A little practice in vaccine inoculation, attentively conducted, impresses on the mind the perfect character of the vaccine pustule; therefore, when a deviation arises, of whatever kind it may be, common prudence points out the necessity of re-inoculation.” The deviation, when it arises from the cuticular disease I am speaking of, generally corresponds with that above recited. I might have added, that if the pustule is not much disturbed in its course by scratching, it commonly terminates in a scab of a pale brown or amber colour, and soft in its texture, compared with that produced by the true vaccine pustule. I have abundant testimony to prove, that the fluid taken from a spurious vaccine pustule thus excited, is capable of propagating and perpetuating its like. Indeed, the vaccine fluid, even in a pustule going through its course perfectly, if taken in its far advanced stages, is capable of producing varieties, which will be permanent if we continue to vaccinate from it. I mention the subject briefly now; but it is my intention (as it embraces a wide field) to enlarge upon it, and some others connected with vaccination, when circumstances will permit me. Medical practitioners should be particularly circumspect when they inoculate those who have cuticular dis-

eases. The danger of insecurity would be at once obviated, if on the appearance of an irregular pustule, the disease were to be subdued by proper applications, and the patient then re-inoculated. I shall select a case, to show the efficacy of this mode of proceeding.

A family, consisting of five fine healthy-looking children, were inoculated by me at Cheltenham in the autumn of 1803 with fluid virus taken immediately from a proper vaccine pustule. On examining the punctures on the fifth day, I found, that on the left arm of one of the children, the pustule was advancing too rapidly. It was of an irregular form, contained already an opaque fluid, and was surrounded by an efflorescence of a dusky red colour to the extent of one-third part of an inch. Such an intolerable itching was excited, that the boy (who was only three years old) could not be prevented from rubbing it. This appearance led me to an examination; and on the child's head I observed an herpetic blotch not much larger in circumference than a shilling. The hair around the part was stiffened by the concreted ichor oozing from the sore, which had made its appearance about ten days. No eruption showed itself in any other part of the body. The pustule was repeatedly broken by the child's scratching and rubbing it; and the inflammation on the arm, which began to spread so early, on the eighth and ninth day became very extensive. The child, at the same time, was hot and restless. A soft, amber-coloured scab\* now began to form; but this being rubbed off, the part ulcerated and healed slowly, leaving a cicatrix deeper and larger than in ordinary cases. The disease on the scalp was now quickly subdued by the use of tar ointment; and at the expiration of six weeks from its commencement, the inoculation was repeated, when the pustule went through all its proper stages with perfect regularity. The rest of the children inoculated at the same time, went through the cow-pox in the ordinary way, without any irregular appearance.

I have selected this case, to show how slight a local appearance may produce a change in the state of the skin, at a distance from it. I cannot call it a general change in every case, as I have sometimes found a correct pustule on one arm, and a spurious pustule on the other; indeed, I have sometimes found the perfect and imperfect pustule on the same arm, within two

\* It may be remarked, that purulent matter cannot form a scab so hard and compact as limpid matter. Hence arises the difference between the variolous and the vaccine scab. It accounts too for the varicellous scab being commonly harder than the variolous.

inches of each other, when the virus inserted was taken the same instant from the same perfect pustule. It happens that I more frequently detect the disease by the appearance of the arm, than previously to inoculation. Parental fondness is often mismanaged, and induces mothers to conceal eruptive complaints on their children.

These are the constitutions which sometimes show a few wandering pustulous eruptions after Vaccine inoculation; and so peculiarly irritable is the skin when influenced by herpes, that the smallest wound, a slight scratch, or the pricking of a pin, for example, commonly produces inflammation, and slight, superficial suppuration.

The preceding year I inoculated another child at Cheltenham, whose face was involved in one general thick incrustation. She had been in this state, without any material variation, upwards of two years, during which time many applications had been used to no purpose. The scalp partook, in some degree, of the same kind of disease; but the body and limbs were free from it, except when any of the acrid fluid, oozing from fissures in the crust, chanced to fall upon the neck or breast; it then invariably produced, for a time, a similar appearance. On vaccinating this child by a single puncture in each arm, the pustules went through their course correctly. On their decline, the incrustation began to be less coherent, and to drop off; and at the expiration of a fortnight, the face was smooth, no vestige of the disease remaining, except a slight inflammation of the eye-lids.

Cases of this sort have become familiar; Mr. Ring has given several in his very copious Treatise on the Cow-pox; and they have been mentioned by other authors, both here and on the Continent.

I have in like manner sometimes seen papulous eruptions, which have long proved troublesome, speedily swept away.

This I think may be accounted for. The vaccine virus, a few days after its insertion, begins to act upon the constitution. It is then manifest, from a new appearance which these eruptions put on, commonly that of increased inflammation, that a new action has been excited in them. The original morbid action therefore becomes deranged and is destroyed, and consequently the disease is conquered. I have seen many instances where pre-existing pimples have been converted into vaccine pocks, which have kept pace with those on the arms in their progressive changes.

Seeing that the skin, when disposed to reject the ordinary

action of the variolous virus, rejects the vaccine also, I shall just observe; it occurs to me as probable, that its herpetic state, at the time of inoculation, has been the chief source of those failures, which many practitioners have witnessed in inoculating for the small-pox: for in many instances where, on subsequent exposure to infection, the disease has been taken, it has been found that the process of inflammation and suppuration on the arms had gone to a greater extent than in ordinary cases, that the symptomatic affections were clearly marked, and that even eruptions, though small and seldom maturing, have appeared. But as the state of the arm became a secondary object in inoculating for the small pox, our solicitude being directed to what appeared of far more consequence, the number of pustules, I almost despair of obtaining much information on this point.

I shall conclude this paper by observing, that although the Vaccine Inoculator does not inflict a severe disease, but, on the contrary, produces a mild affection scarcely meriting that term, yet, nevertheless, he should be extremely careful to obtain a just and clear conception of this important branch of medical science. He should not only be acquainted with the laws and agencies of the vaccine virus on the constitution, but with those of the variolous also, as they often interfere with each other.

A general knowledge of the subject is not sufficient to enable or to warrant a person to practice Vaccine Inoculation; he should possess a particular knowledge; and that which I would wish strongly to inculcate, as the great foundation of the whole, is an intimate acquaintance with the character of the true and genuine vaccine pustule. The spurious pustule would then be readily detected, whatever form it might assume; and errors known no more.

I am, &c.

EDWARD JENNER.

*Berkeley, July 15, 1804.*







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